

## THE GENUS ERYTHMELUS IN CALIFORNIA

(Hymenoptera, Mymaridae)

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This paper is a synopsis of the species of *Erythmelus* presently known to occur in California. The author is grateful to A. B. Gahan who kindly compared series of specimens from California with the type material held in the United States National Museum.

*Erythmelus flandersi* Doutt, new species

Near *picinus*, but easily distinguished by having funicle segment four shorter than segment six. Differs from *gracilipes* by possessing longer funicle segments, more extensive discal ciliation on forewing, and a decidedly darker color. Antennae somewhat similar to *longicornis*, but *flandersi* has longer forewings and relatively longer basal segments of hind tarsi.

*Female*. Length 0.9-1.0 mm. General body-color very dark brown to black. Basal and ventral portions of abdomen lighter. Trochanters pallid. Eyes red. Wings hyaline or but slightly and indistinctly fumated.

Viewed laterally, head over twice longer than wide; face between eyes concave; fronto-vertex peaked at acute angle. Viewed frontally head as wide as long; ridge of fronto-vertex transverse between posterior ocelli; orbital line broken in fronto-vertex area, of beaded appearance; facial line transverse, unbroken.

Antenna as in Fig. 1, A. Funicle segment 1 slightly longer than 2. Segments 2-6 gradually increase in width. Segment 4 longer than any funicle segment except 6, the largest. Club thickly clothed with small sensory setae.

Forewings long and somewhat narrow for genus. About 5 lines of discal cilia on apical third of wing. A single irregular line of short discal setae extends medianly from beneath wing venation to apical ciliation of disk. Single row of setae located near cephalic margin of wing, extending from venation to apex. Wing base normally fumated.

Posterior wings with single complete median row of cilia. Sparse row near cephalic margin, another partial row near basal caudal margin. Maculate.

Thorax long; in cleared specimens a light transverse band appears on scutum. Scutellum longitudinally striate. Apex of metanotum acutely projects dorsally.

Abdomen with prominent ventral sheath beneath ovipositor. Ovipositor and lateral valves slightly exerted.

*Male*. Length 1.0 mm. color as in female. Genitalia extended beyond apex of abdomen, (all specimens examined had been processed through alcohol for slide mounts). Antennae as in Fig. 1, F., filiform, each funicle segment longer than either scape or pedicel. Funicle segments with longitudinal carinae, setae arise from between carinae. Wings slightly narrower than female.

Described from 17 ♀ ♀ and 4 ♂ ♂ all captured by R. C. Dickson on yellow tanglefoot boards suspended in orange trees. *Holotype*; ♀, COVINA, CALIFORNIA, May 3 to 17, 1946. *Allotype*, ♂ COVINA, CALIFORNIA, May 3 to 17, 1946. *Paratypes*, 9 ♀ ♀, 1 ♂, COVINA, CALIFORNIA, May 3 to 17, 1946; 4 ♀ ♀, 2 ♂ ♂, April 26, 1946; 1 ♀, PERALTA, CALIFORNIA, May 3 to 17, 1946; 1 ♀, E. HIGHLAND, May 1, 1946; 1 ♀, CUCAMONGA, CALIFORNIA, May 1, 1946.

Host unknown.

Types deposited in the collection of the Division of Biological Control of the University of California. Paratypes to be deposited with the California Academy of Sciences and the United States National Museum.

This species is dedicated to S. E. Flanders, through whose energy the first representative collection of Californian Mymaridae was assembled.

#### ERYTHMELUS GRACILIS (Howard)

*Anaphes gracilis* Howard, 1881, Rept. Ent. U.S.D.A. 1880, p. 370. *Anaphes cinctiventris* Girault 1911, Trans. Amer. Ent. Soc., 37 (3): 286-287. (New synonymy).

The type locality of *cinctiventris* is Mountain View, California, however, this species is believed to be synonymous with *gracilis* which has been taken in Georgia, Illinois, and District of Columbia. All the specimens examined were collected by R. C. Dickson on tanglefoot boards suspended in orange trees. The following localities are recorded: West Arcadia, 2 ♀ ♀, June 14, 1946; 3 ♀ ♀, August 25, 1946. Cucamonga, single females captured July 1, July 26, August 9, 1946. Covina, Calif., 1 ♀, August 25, 1946. East Highland 1 ♀, Sept. 20, 1946.

Hosts for *A. gracilis* are recorded as *Aspidiotus perniciosus* Comst., *Lepidosaphes ulmi* (Linn.), and the eggs of *Carpocapsa pomonella* (Linn.). The unusual host range indicated by these

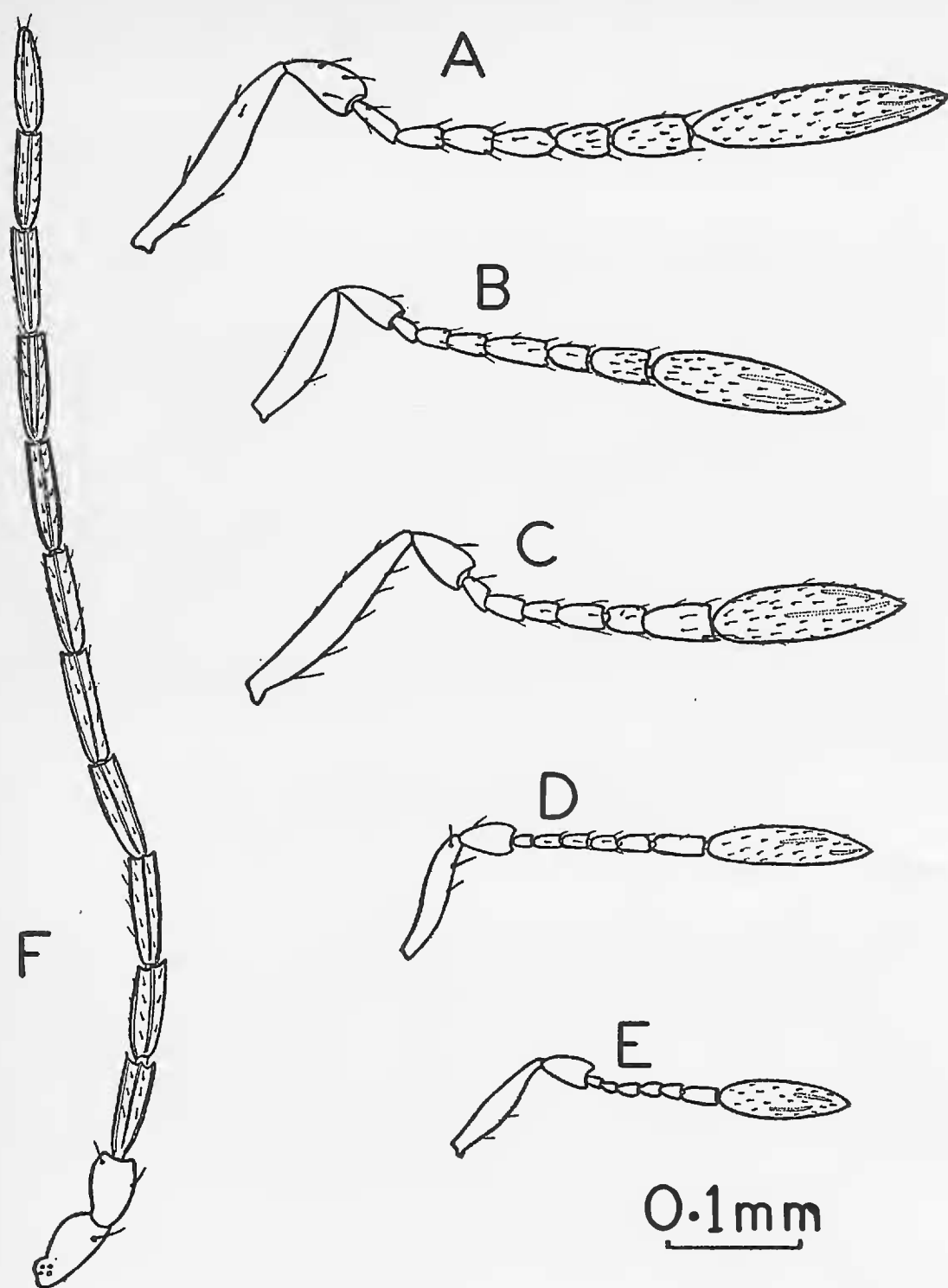


Figure 1. Antennae of Californian Species of *Erythmelus*. A. *flandersi* ♀, B. *picinus* ♀, C. *gracilis* ♀, D. *miridiphagus* ♀, E. *psalladis* ♀, F. *flandersi* ♂.

records suggests the need for confirmation through controlled rearings.

#### ERYTHMELUS MIRIDIPHAGUS Dozier

*E. miridiphagus* Dozier 1937. Jour. Agric. Univ. Puerto Rico, 21: 133.

*E. miridiphagus* has recently been collected along riparian areas in northern California. Otherwise this species is known only from Puerto Rico. The number of entomologists who have collected Mymaridae is small indeed, and the inadequate coverage of vast areas accounts for such spotty distributional records.

*E. miridiphagus* has been collected in California at the following localities: Russian River, near Forestville, 2 ♀ ♀, May 28, 1947 (Doutt); Rio Nido, 2 ♀ ♀, May, 1, 1947 (Doutt); Nicolaus, 1 ♀, 1 ♂, April 25, 1947 (Doutt).

The host of *E. miridiphagus* in Puerto Rico is asumed to be a mirid, *Polymerus cuneatus* Distant, but no actual rearings verify this supposition.

#### ERYTHMELUS PICINUS (Girault)

*Anaphes picinus* Girault, 1916. Ent. News, 27:6-7.

*E. picinus* was described from New Mexico and these records extend its range to California. Specimens have been collected in the following localities: Hecker Pass, 1 ♀, Sept. 17, 1947 (Doutt); La Manda Park, 2 ♀ ♀, April 12, 1923 (Compere); Novato, 1 ♀, July 3, 1947 (Doutt); Rio Nido, 1 ♂, May 28, 1947, 1 ♀, Oct. 17, 1947 (Doutt), Forestville, 2 ♀ ♀, May 28, 1947.

#### ERYTHMELUS PSALLIDIS Gahan

*Erythmelus psallidis* Gahan, 1937 Proc. Ent. Soc. Wash., 39(9): 266-269.

The species is distributed through South Carolina, Mississippi, Louisiana, Arkansas, Texas, and Arizona. The record in this paper extends its range to southern California. During 1933, in August and September, 12 ♀ ♀ and 5 ♂ ♂ specimens were collected from ragweed at Arlington, Calif., by S. E. Flanders.

*E. psallidis* is probably the only species of the genus with a host record that can at this time be considered entirely reliable. Its preferred host is the cotton flea hopper, *Psallus seriatus* (Reuter), but it also attacks a mirid, *Reuteroscapus sulphureus* (Reut.), as

determined through careful rearings by Ewing and Crawford (1939). On purely circumstantial evidence they also list as a host another mirid, *Macrolophus separatus* (Uhler).

### ERYTHMELUS IO (Girault)

*Anagrus io* Girault, 1911 Trans. Amer. Ent. Soc., 37(3):294-295.

Girault described this species from a single male taken in Illinois and he appended the description with a statement that a similar tag mounted male was found in the National Museum collection with a locality label of Los Angeles County California. However, this specimen differed from the type, *io*, in wing coloration. Girault later suggests that *io* is similar to *cinctiventris* and cannot be defined very well.

It is possible that *io* is a valid species and is present in California, but none of the specimens which have been examined are recognizable as this species. It is also possible that the female of *io* is described as an entirely different species. The status of *io* is considered too doubtful to warrant its inclusion in the following key.

### KEY TO CALIFORNIAN SPECIES OF ERYTHMELUS

#### Females

1. Funicle segment 4 shorter than segment 6.....2
- Funicle segment 4 equal to or longer than segment 6 .....*picinus*
2. Species small, funicle segment 1 small, less than half length of funicle 6.....3
- Species large, funicle segment 1 over half length of 6 .....*flandersi*
3. Basitarsus only slightly longer than second tarsal segment.....4
- Basitarsus nearly twice the length of second tarsal segment .....*gracilis*
4. Funicle segment 5 subquadrate, Californian specimens of light color. Club about 3 times as long as broad.....*psallidis*
- Funicle segment 5 not subquadrate, Funicle 6 almost twice length of any other funicle segment. Club 3.5 times as long as broad .....*miridiphagus*

### LITERATURE CITED

- EWING, K. P. and H. J. CRAWFORD. 1939. Egg parasites of the cotton flea hopper. Jour. Econ. Ent., 32(2):303-305.